February 2005 Water Sampling

Validation Data Package
for
Configuration 1 Interim Action Well Field Monthly Sampling
Moab, Utah

July 2005

Moab, Utah

February 22-24, 2005

Data Package Contents

This data package includes the following information:

Item No.	Description of Contents
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Sampling Event Summary

Site: Moab, Utah

Sampling Period: February 22-24, 2005

The purpose of this sampling was to collect data that can be used to evaluate the performance of Configuration 1 of the interim action well field. The extraction wells had been operating since June 2004 and were shut down for the winter on December 23, 2004. This is the second monthly performance sampling round conducted in 2005 for Configuration 1.

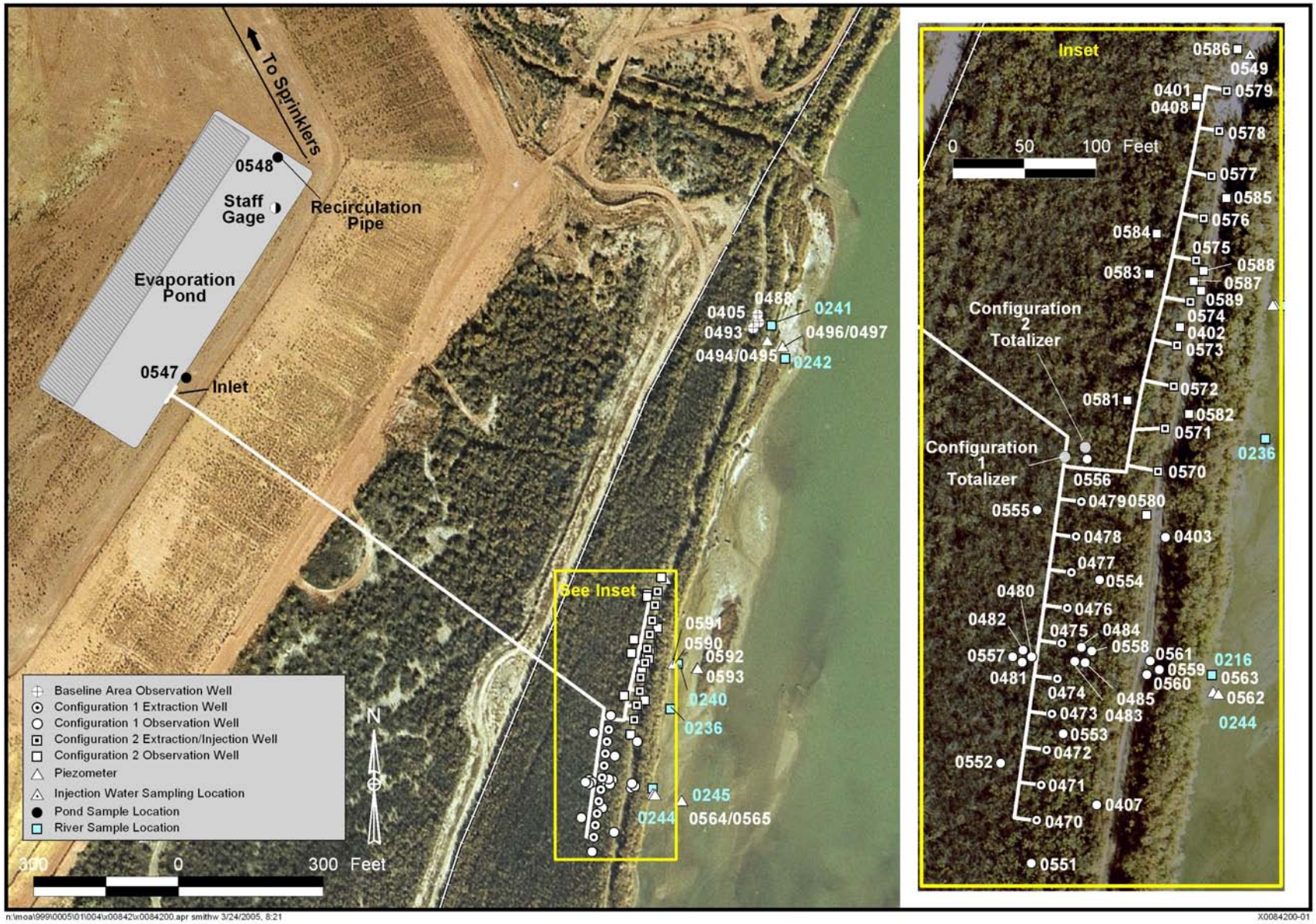
Sampling and analysis was conducted in accordance with the *Operations, Maintenance, and Performance Monitoring Plan for the Interim Action Ground Water Treatment System, February 2004.* Ground water samples were collected from 10 extraction wells (0470-0479), 6 observation wells (0403, 0407, 0483, 0557, 0559, and 0560), 4 piezometers (0562-0565), and 4 surface water locations (0216, 0245,0537, and 0547). Including two duplicates and one equipment blank, a total of 27 samples were collected.

A detailed discussion of extraction well field performance is presented in the *Fall 2004 Performance Assessment of the Ground Water Interim Action Well Fields at the Moab, Utah, Project Site, January 2005.* However, time versus concentration graphs for selected key performance indicator wells and major contaminants of concern are included. Data presented in these graphs indicate that contaminant concentrations are at expected levels.

Kenneth E. Karp
Site Lead

7-15-05
Date

Sample Location Map



Sample Locations at the Interim Action Well Field and Baseline Area (may include locations not sampled)

Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	Moab, Utah	**Date(s) of Water Sampling**	February 22-24, 2005
Date(s) of Verification	June 2, 2005	**Name of Verifier**	Jeff Price

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	No	See trip report for explanation.
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Requisition No.:	05020166
Sample Event:	February 22-24, 2005
Site(s):	Moab, Utah
Laboratory:	Paragon Analytics
Work Order No.:	0502220
Analysis:	Metals and Inorganics
Validator:	Steve Donivan
Review Date:	March 28, 2005

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data", GT-9(P) (2004). All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020
Chloride, Cl	MIS-A-039	SW-846 9056	SW-846 9056
Sulfate, SO4	MIS-A-044	SW-846 9056	SW-846 9056
Ammonia as N, NH_3-N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Total Dissolved Solids, TDS	WCH-A-033	MCAWW 160.1	MCAWW 160.1

Data Qualifier Summary

The uranium result for samples 0502220-23 and 0502220-27 are qualified as "U" because the associated calibration blank result is greater than the method detection limit (MDL) and the sample results are less than five times the blank result.

Table 2. Data Qualifiers

Sample Number	Location	Analyte	Flag	Reason
0502220-23	0564	Uranium	U	Less than 5 times the calibration blank
0502220-27	2784	Uranium	U	Less than 5 times the calibration blank

Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received 27 samples on February 25, 2005, accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all

of the samples were listed on the form and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the COC form, the sample submittal form, and the sample tickets had no errors or omissions.

Preservation and Holding Times

The sample shipment was received cool and intact with the temperature within the coolers of 2.4 ºC and 2.6 ºC, which complies with requirements. All samples had been preserved correctly for the requested analyses with the following exception. The bottles from locations 0562, 0563, 0564, and 0565 were submitted unfiltered and unpreserved because of the low volume available. The laboratory filtered and preserved the samples upon receipt, as instructed. Sufficient time elapsed between the pH adjustment and the sample analysis to allow equilibrium. All samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method SW-846 6020

Calibrations for uranium were performed on March 4, 2005 and March 7, 2005. The initial calibrations were performed using four calibration standards resulting in a correlation coefficient (r^2) value greater than 0.995. The absolute values of the intercept were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification (CCV) checks were made at the required frequency resulting in nine CCVs. All calibration checks met the acceptance criteria. A reporting limit verification check was made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit. The check was within the acceptance criteria range on March 4, 2005, but below the lower limit on March 7, 2005. The samples analyzed on March 7, 2005 were greater than 5 times the practical quantitation limit and did not require qualification. Mass calibration and resolution verifications were performed at the beginning of each analytical run. Internal standard recoveries were stable and within acceptable ranges.

Method SW-846 9056

The initial calibrations for chloride and sulfate were performed using five calibration standards each on February 10, 2005. The r^2 values were greater than 0.995 and intercepts were less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Initial and continuing calibration checks were made at the required frequency resulting in 16 CCVs that met the acceptance criteria.

Method MCAWW 350.1

The initial calibration for ammonia as N was performed using six calibration standards on March 9, 2005, resulting in a r^2 value greater than 0.995. Initial and continuing calibration checks were made at the required frequency resulting in eight CCVs. All initial and CCVs were within the acceptance criteria.

Method MCAWW 160.1

There is no initial or continuing calibration requirement associated with the determination of total dissolved solids (TDS).

Method and Calibration Blanks

The uranium initial and continuing calibration blanks were below the practical quantitation limits. The uranium results for samples 0564 and 2784 were less than 5 times the concentration of the associated continuing calibration blank and are qualified as "U". The chloride, sulfate, ammonia as N, and TDS method blanks, and initial and continuing calibration blanks were below the MDLs.

Inductively Coupled Plasma Interference Check Sample Analysis

Inductively coupled plasma (interference check samples were analyzed at the required frequency and all results met the acceptance criteria.

Matrix Spike Analysis

Two matrix spike and matrix spike duplicate pairs were analyzed for uranium, chloride, sulfate, and ammonia as N with acceptable results.

Laboratory Replicate Analysis

The relative percent difference (RPD) values for the matrix spike duplicate sample results for uranium, chloride, sulfate, ammonia as N were less than 20 percent. The RPD values for the laboratory duplicate sample results for TDS were less than 20 percent.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency with acceptable results for all analysis categories.

Metals Serial Dilution

Serial dilutions were performed during the uranium analysis to monitor physical or chemical interferences that may exist in the sample matrix. The results met the acceptance criteria.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium to reduce interferences. The required detection limits were achieved for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable File

An Electronic Data Deliverable (EDD) file arrived on March 24, 2005. The EDD validation application identified no problems with the file.

Field Analyses/Activities

The following information summarizes the field analyses and activities for this sampling event period.

Field Activities

All monitor well results were qualified with an "F" flag in the database indicating the wells were purged and sampled using the low-flow sampling method. Extraction wells are not sampled using the low-flow sampling method.

An equipment blank was collected and analyzed for the same constituents as the Moab environmental samples. Concentrations measured in the equipment blank were below their respective contract required detection limits; therefore, equipment blank results are considered acceptable. Duplicate samples were collected from wells 0559 and 0580. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, U.S. Environmental Protection Agency (EPA) guidance for laboratory duplicates (which is conservative for field duplicates) was used to assess the precision of the field duplicates. Duplicate results met the laboratory duplicate criteria of +/- 20 RPD and are considered acceptable.

Certification

Results were reported in correct units for all analytes requested. Appropriate contract-required laboratory qualifiers and target analyte lists were used. The required detection limits were met when possible or an explanation of why they were not met was given in the laboratory case narrative. All analytical quality control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, or equipment/trip blank database printouts. The meaning of data qualifiers is defined on the database printouts or defined in the EPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991. All data in this package are considered validated and may be treated as final results.

Laboratory Validation Lead: Steve Donivan — Steve Donivan — 7-25-05 — Date

Field Activities Validation Lead: J.E. Price — Jeff Price — July 28, 05 — Date

Attachment 1
Data Presentation

Minimums and Maximums Report

Minimums and Maximums Report

The Minimums and Maximums Report is generated by a data validation application (DataVal) used to query the SEEPro database. DataVal compares the new data set with historical data and lists all new data that fall outside the historical data range. Values listed in the report are further screened using the following criteria. Results are not considered anomalous if (1) identified low concentrations are the result of low detection limits; (2) the concentration detected is within 50 percent of historical minimum or maximum values; (3) there were fewer than 5 historical samples for comparison.

There were no anomalous values identified from this sampling event.

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05020166
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 06/02/05 10:31:24: AM

				CURRENT			HISTORICAL MAXIMUM			HISTORICAL MINIMUM			COUNT	
SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	N	N BELOW DETECT
MOA01	0403	02/23/2005	Chloride	180		F	6973.2			190		F	14	0
MOA01	0473	02/23/2005	Ammonia Total as N	580			1100		F	600			16	0
MOA01	0474	02/23/2005	Sulfate	6300			9950			7200			18	0
MOA01	0474	02/23/2005	Uranium	1.9			3.5			2.3		J	18	0
MOA01	0475	02/23/2005	Ammonia Total as N	390			1100		F	490			16	0
MOA01	0475	02/23/2005	Total Dissolved Solids	10000			25000		F	12000			16	0
MOA01	0475	02/23/2005	Uranium	1.4			3.2		F	1.9			16	0
MOA01	0476	02/23/2005	Ammonia Total as N	360			1100		F	410			16	0
MOA01	0476	02/23/2005	Uranium	1.3			3.3		F	1.5			16	0
MOA01	0477	02/23/2005	Ammonia Total as N	390			1200		F	410			16	0
MOA01	0477	02/23/2005	Total Dissolved Solids	9400			26000		F	9900			16	0
MOA01	0477	02/23/2005	Uranium	1.4			3.2		F	1.6			16	0
MOA01	0478	02/23/2005	Ammonia Total as N	470			1400		F	550			16	0
MOA01	0478	02/23/2005	Sulfate	5200			11000		F	5400			16	0
MOA01	0478	02/23/2005	Total Dissolved Solids	12000			32000		F	13000			16	0
MOA01	0483	02/23/2005	Ammonia Total as N	310		F	1500		F	320		F	12	0
MOA01	0483	02/23/2005	Sulfate	2800		F	11000		F	3700		F	12	0
MOA01	0483	02/23/2005	Total Dissolved Solids	7400		F	34000		F	8500		F	12	0
MOA01	0483	02/23/2005	Uranium	0.84		F	3.3		F	1.1		F	12	0
MOA01	0547	02/23/2005	Ammonia Total as N	580			950		J	680			7	0
MOA01	0547	02/23/2005	Chloride	4000			6400		J	4200			7	0

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05020166
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 06/02/05 10:31:24: AM

				CURRENT			HISTORICAL MAXIMUM			HISTORICAL MINIMUM			COUNT	
SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	N	N BELOW DETECT
MOA01	0547	02/23/2005	Total Dissolved Solids	15000			21000			17000			7	0
MOA01	0547	02/23/2005	Uranium	1.9			3			2.2		J	7	0
MOA01	0559	02/23/2005	Sulfate	1400		F	8100		F	1700			8	0
MOA01	0559	02/23/2005	Sulfate	1500		F	8100		F	1700			8	0
MOA01	0559	02/23/2005	Total Dissolved Solids	3400		F	22000		F	3600			8	0
MOA01	0559	02/23/2005	Total Dissolved Solids	3400		F	22000		F	3600			8	0
MOA01	0559	02/23/2005	Uranium	0.48		F	2.4		F	0.53			8	0
MOA01	0580	02/24/2005	Ammonia Total as N	5.8		F	470		F	8.8		F	7	0
MOA01	0580	02/24/2005	Chloride	130		F	2200		F	150		F	7	0
MOA01	0580	02/24/2005	Sulfate	720		F	8100		F	880		F	7	0
MOA01	0580	02/24/2005	Total Dissolved Solids	1500		F	16000		F	1700		F	7	0
MOA01	0580	02/24/2005	Uranium	0.13		F	2.5		F	0.21		F	7	0

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05020166
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 06/02/05 10:31:24: AM

SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	CURRENT RESULT	CURRENT QUALIFIERS LAB	CURRENT QUALIFIERS DATA	HISTORICAL MAXIMUM RESULT	HISTORICAL MAXIMUM QUALIFIERS LAB	HISTORICAL MAXIMUM QUALIFIERS DATA	HISTORICAL MINIMUM RESULT	HISTORICAL MINIMUM QUALIFIERS LAB	HISTORICAL MINIMUM QUALIFIERS DATA	COUNT N	COUNT N BELOW DETECT

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.
- J Estimated

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- Q Qualitative result due to sampling technique
- G Possible grout contamination, pH > 9.
- X Location is undefined.

Water Quality Data

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0216	SL, RIV	02/22/2005	0001	0.17 - 0.17	210			#	-	-
	mg/L	0245	SL, RIV	02/22/2005	0001	0.25 - 0.25	150			#	-	-
	mg/L	0403	WL	02/23/2005	0001	18.00 - 18.00	226		F	#	-	-
	mg/L	0407	WL	02/23/2005	0001	17.00 - 17.00	466		F	#	-	-
	mg/L	0470	WL, EXT	02/23/2005	0001	10.30 - 19.70	892			#	-	-
	mg/L	0471	WL, EXT	02/23/2005	0001	10.30 - 19.70	944			#	-	-
	mg/L	0473	WL, EXT	02/23/2005	0001	10.30 - 19.70	770			#	-	-
	mg/L	0474	WL, EXT	02/23/2005	0001	10.30 - 19.70	712			#	-	-
	mg/L	0475	WL, EXT	02/23/2005	0001	10.30 - 19.70	682			#	-	-
	mg/L	0476	WL, EXT	02/23/2005	0001	10.30 - 19.70	570			#	-	-
	mg/L	0477	WL, EXT	02/23/2005	0001	10.30 - 19.70	602			#	-	-
	mg/L	0478	WL, EXT	02/23/2005	0001	9.60 - 23.90	640			#	-	-
	mg/L	0479	WL, EXT	02/23/2005	0001	9.30 - 23.60	540			#	-	-
	mg/L	0483	WL	02/23/2005	0001	18.00 - 18.00	382		F	#	-	-
	mg/L	0537	TS, SUMP	02/24/2005	0001	0.00 - 0.00	1240			#	-	-
	mg/L	0547	TS, INFL	02/23/2005	0001	0.00 - 0.00	770			#	-	-
	mg/L	0557	WL	02/24/2005	0001	40.00 - 40.00	880		F	#	-	-
	mg/L	0559	WL	02/23/2005	0001	19.00 - 19.00	310		F	#	-	-
	mg/L	0560	WL	02/24/2005	0001	31.00 - 31.00	604		F	#	-	-
	mg/L	0580	WL	02/24/2005	0001	18.00 - 18.00	216		F	#	-	-
Ammonia Total as N	mg/L	0216	SL, RIV	02/22/2005	0001	0.17 - 0.17	7.6			#	0.2	-
	mg/L	0245	SL, RIV	02/22/2005	0001	0.25 - 0.25	0.36			#	0.1	-
	mg/L	0403	WL	02/23/2005	0001	18.00 - 18.00	41		F	#	2	-
	mg/L	0407	WL	02/23/2005	0001	17.00 - 17.00	280		F	#	50	-
	mg/L	0470	WL, EXT	02/23/2005	0001	10.30 - 19.70	880			#	50	-
	mg/L	0471	WL, EXT	02/23/2005	0001	10.30 - 19.70	850			#	50	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	0472	WL, EXT	02/23/2005	0001	10.30 - 19.70	710			#	50	-
	mg/L	0473	WL, EXT	02/23/2005	0001	10.30 - 19.70	580			#	50	-
	mg/L	0474	WL, EXT	02/23/2005	0001	10.30 - 19.70	450			#	50	-
	mg/L	0475	WL, EXT	02/23/2005	0001	10.30 - 19.70	390			#	50	-
	mg/L	0476	WL, EXT	02/23/2005	0001	10.30 - 19.70	360			#	50	-
	mg/L	0477	WL, EXT	02/23/2005	0001	10.30 - 19.70	390			#	50	-
	mg/L	0478	WL, EXT	02/23/2005	0001	9.60 - 23.90	470			#	50	-
	mg/L	0479	WL, EXT	02/23/2005	0001	9.30 - 23.60	500			#	50	-
	mg/L	0483	WL	02/23/2005	0001	18.00 - 18.00	310		F	#	50	-
	mg/L	0537	TS, SUMP	02/24/2005	0001	0.00 - 0.00	5300			#	200	-
	mg/L	0547	TS, INFL	02/23/2005	0001	0.00 - 0.00	580			#	50	-
	mg/L	0557	WL	02/24/2005	0001	40.00 - 40.00	950		F	#	50	-
	mg/L	0559	WL	02/23/2005	0001	19.00 - 19.00	140		F	#	10	-
	mg/L	0559	WL	02/23/2005	0002	19.00 - 19.00	140		F	#	10	-
	mg/L	0560	WL	02/24/2005	0001	31.00 - 31.00	2100		F	#	50	-
	mg/L	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	66		QF	#	5	-
	mg/L	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	91		QF	#	5	-
	mg/L	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	0.63		QF	#	0.1	-
	mg/L	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	31		QF	#	2	-
	mg/L	0580	WL	02/24/2005	0001	18.00 - 18.00	5.6		F	#	0.2	-
	mg/L	0580	WL	02/24/2005	0002	10.23 - 20.16	5.8		F	#	0.2	-
Chloride	mg/L	0216	SL, RIV	02/22/2005	0001	0.17 - 0.17	150			#	4	-
	mg/L	0245	SL, RIV	02/22/2005	0001	0.25 - 0.25	110			#	2	-
	mg/L	0403	WL	02/23/2005	0001	18.00 - 18.00	180		F	#	4	-
	mg/L	0407	WL	02/23/2005	0001	17.00 - 17.00	3000		F	#	40	-
	mg/L	0470	WL, EXT	02/23/2005	0001	10.30 - 19.70	6200			#	100	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	0471	WL, EXT	02/23/2005	0001	10.30 - 19.70	6500			#	100	-
	mg/L	0472	WL, EXT	02/23/2005	0001	10.30 - 19.70	4700			#	100	-
	mg/L	0473	WL, EXT	02/23/2005	0001	10.30 - 19.70	3700			#	40	-
	mg/L	0474	WL, EXT	02/23/2005	0001	10.30 - 19.70	3100			#	40	-
	mg/L	0475	WL, EXT	02/23/2005	0001	10.30 - 19.70	2300			#	40	-
	mg/L	0476	WL, EXT	02/23/2005	0001	10.30 - 19.70	2200			#	40	-
	mg/L	0477	WL, EXT	02/23/2005	0001	10.30 - 19.70	2100			#	40	-
	mg/L	0478	WL, EXT	02/23/2005	0001	9.60 - 23.90	3300			#	40	-
	mg/L	0479	WL, EXT	02/23/2005	0001	9.30 - 23.60	3900			#	40	-
	mg/L	0483	WL	02/23/2005	0001	18.00 - 18.00	2500		F	#	40	-
	mg/L	0537	TS, SUMP	02/24/2005	0001	0.00 - 0.00	2500			#	200	-
	mg/L	0547	TS, INFL	02/23/2005	0001	0.00 - 0.00	4000			#	40	-
	mg/L	0557	WL	02/24/2005	0001	40.00 - 40.00	10000		F	#	200	-
	mg/L	0559	WL	02/23/2005	0001	19.00 - 19.00	870		F	#	20	-
	mg/L	0559	WL	02/23/2005	0002	19.00 - 19.00	900		F	#	20	-
	mg/L	0560	WL	02/24/2005	0001	31.00 - 31.00	37000		F	#	1000	-
	mg/L	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	330		QF	#	20	-
	mg/L	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	460		QF	#	20	-
	mg/L	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	140		QF	#	4	-
	mg/L	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	260		QF	#	4	-
	mg/L	0580	WL	02/24/2005	0001	18.00 - 18.00	130		F	#	4	-
	mg/L	0580	WL	02/24/2005	0002	10.23 - 20.16	130		F	#	4	-
Dissolved Oxygen	mg/L	0216	SL, RIV	02/22/2005	N001	0.17 - 0.17	11.09			#	-	-
	mg/L	0245	SL, RIV	02/22/2005	N001	0.25 - 0.25	10.78			#	-	-
	mg/L	0403	WL	02/23/2005	N001	18.00 - 18.00	2.24		F	#	-	-
	mg/L	0407	WL	02/23/2005	N001	17.00 - 17.00	9.55		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	0470	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.37			#	-	-
	mg/L	0471	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.49			#	-	-
	mg/L	0472	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.64			#	-	-
	mg/L	0473	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.80			#	-	-
	mg/L	0474	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.71			#	-	-
	mg/L	0475	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.79			#	-	-
	mg/L	0476	WL, EXT	02/23/2005	N001	10.30 - 19.70	0.96			#	-	-
	mg/L	0477	WL, EXT	02/23/2005	N001	10.30 - 19.70	1.13			#	-	-
	mg/L	0478	WL, EXT	02/23/2005	N001	9.60 - 23.90	0.82			#	-	-
	mg/L	0479	WL, EXT	02/23/2005	N001	9.30 - 23.60	0.79			#	-	-
	mg/L	0483	WL	02/23/2005	N001	18.00 - 18.00	2.97		F	#	-	-
	mg/L	0537	TS, SUMP	02/24/2005	N001	0.00 - 0.00	3.62			#	-	-
	mg/L	0547	TS, INFL	02/23/2005	N001	0.00 - 0.00	4.91			#	-	-
	mg/L	0557	WL	02/24/2005	N001	40.00 - 40.00	1.26		F	#	-	-
	mg/L	0559	WL	02/23/2005	N001	19.00 - 19.00	5.29		F	#	-	-
	mg/L	0560	WL	02/24/2005	N001	31.00 - 31.00	0.84		F	#	-	-
	mg/L	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	4.41		QF	#	-	-
	mg/L	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	2.76		QF	#	-	-
	mg/L	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	6.21		QF	#	-	-
	mg/L	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	3.31		QF	#	-	-
	mg/L	0580	WL	02/24/2005	N001	18.00 - 18.00	3.24		F	#	-	-
Oxidation Reduction Potent	mV	0216	SL, RIV	02/22/2005	N001	0.17 - 0.17	117			#	-	-
	mV	0245	SL, RIV	02/22/2005	N001	0.25 - 0.25	121			#	-	-
	mV	0403	WL	02/23/2005	N001	18.00 - 18.00	104		F	#	-	-
	mV	0407	WL	02/23/2005	N001	17.00 - 17.00	126		F	#	-	-
	mV	0470	WL, EXT	02/23/2005	N001	10.30 - 19.70	107			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0471	WL, EXT	02/23/2005	N001	10.30 - 19.70	107			#	-	-
	mV	0472	WL, EXT	02/23/2005	N001	10.30 - 19.70	102			#	-	-
	mV	0473	WL, EXT	02/23/2005	N001	10.30 - 19.70	105			#	-	-
	mV	0474	WL, EXT	02/23/2005	N001	10.30 - 19.70	101			#	-	-
	mV	0475	WL, EXT	02/23/2005	N001	10.30 - 19.70	100			#	-	-
	mV	0476	WL, EXT	02/23/2005	N001	10.30 - 19.70	102			#	-	-
	mV	0477	WL, EXT	02/23/2005	N001	10.30 - 19.70	104			#	-	-
	mV	0478	WL, EXT	02/23/2005	N001	9.60 - 23.90	103			#	-	-
	mV	0479	WL, EXT	02/23/2005	N001	9.30 - 23.60	103			#	-	-
	mV	0483	WL	02/23/2005	N001	18.00 - 18.00	104		F	#	-	-
	mV	0537	TS, SUMP	02/24/2005	N001	0.00 - 0.00	91			#	-	-
	mV	0547	TS, INFL	02/23/2005	N001	0.00 - 0.00	113			#	-	-
	mV	0557	WL	02/24/2005	N001	40.00 - 40.00	113		F	#	-	-
	mV	0559	WL	02/23/2005	N001	19.00 - 19.00	107		F	#	-	-
	mV	0560	WL	02/24/2005	N001	31.00 - 31.00	94		F	#	-	-
	mV	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	128		QF	#	-	-
	mV	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	124		QF	#	-	-
	mV	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	118		QF	#	-	-
	mV	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	117		QF	#	-	-
	mV	0580	WL	02/24/2005	N001	18.00 - 18.00	90		F	#	-	-
pH	s.u.	0216	SL, RIV	02/22/2005	N001	0.17 - 0.17	8.20			#	-	-
	s.u.	0245	SL, RIV	02/22/2005	N001	0.25 - 0.25	8.14			#	-	-
	s.u.	0403	WL	02/23/2005	N001	18.00 - 18.00	7.53		F	#	-	-
	s.u.	0407	WL	02/23/2005	N001	17.00 - 17.00	7.58		F	#	-	-
	s.u.	0470	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.88			#	-	-
	s.u.	0471	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.88			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0472	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.88			#	-	-
	s.u.	0473	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.90			#	-	-
	s.u.	0474	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.86			#	-	-
	s.u.	0475	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.91			#	-	-
	s.u.	0476	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.94			#	-	-
	s.u.	0477	WL, EXT	02/23/2005	N001	10.30 - 19.70	6.93			#	-	-
	s.u.	0478	WL, EXT	02/23/2005	N001	9.60 - 23.90	6.97			#	-	-
	s.u.	0479	WL, EXT	02/23/2005	N001	9.30 - 23.60	6.99			#	-	-
	s.u.	0483	WL	02/23/2005	N001	18.00 - 18.00	7.15		F	#	-	-
	s.u.	0537	TS, SUMP	02/24/2005	N001	0.00 - 0.00	6.22			#	-	-
	s.u.	0547	TS, INFL	02/23/2005	N001	0.00 - 0.00	7.01			#	-	-
	s.u.	0557	WL	02/24/2005	N001	40.00 - 40.00	6.94		F	#	-	-
	s.u.	0559	WL	02/23/2005	N001	19.00 - 19.00	7.36		F	#	-	-
	s.u.	0560	WL	02/24/2005	N001	31.00 - 31.00	6.79		F	#	-	-
	s.u.	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	9.04		QF	#	-	-
	s.u.	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	8.76		QF	#	-	-
	s.u.	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	7.55		QF	#	-	-
	s.u.	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	8.94		QF	#	-	-
	s.u.	0580	WL	02/24/2005	N001	18.00 - 18.00	7.30		F	#	-	-
Specific Conductance	umhos/cm	0216	SL, RIV	02/22/2005	N001	0.17 - 0.17	1641			#	-	-
	umhos/cm	0245	SL, RIV	02/22/2005	N001	0.25 - 0.25	1171			#	-	-
	umhos/cm	0403	WL	02/23/2005	N001	18.00 - 18.00	2164		F	#	-	-
	umhos/cm	0407	WL	02/23/2005	N001	17.00 - 17.00	45		F	#	-	-
	umhos/cm	0470	WL, EXT	02/23/2005	N001	10.30 - 19.70	29850			#	-	-
	umhos/cm	0471	WL, EXT	02/23/2005	N001	10.30 - 19.70	28495			#	-	-
	umhos/cm	0472	WL, EXT	02/23/2005	N001	10.30 - 19.70	24860			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0473	WL, EXT	02/23/2005	N001	10.30 - 19.70	20750			#	-	-
	umhos/cm	0474	WL, EXT	02/23/2005	N001	10.30 - 19.70	18580			#	-	-
	umhos/cm	0475	WL, EXT	02/23/2005	N001	10.30 - 19.70	15020			#	-	-
	umhos/cm	0476	WL, EXT	02/23/2005	N001	10.30 - 19.70	14050			#	-	-
	umhos/cm	0477	WL, EXT	02/23/2005	N001	10.30 - 19.70	14025			#	-	-
	umhos/cm	0478	WL, EXT	02/23/2005	N001	9.60 - 23.90	16265			#	-	-
	umhos/cm	0479	WL, EXT	02/23/2005	N001	9.30 - 23.60	18710			#	-	-
	umhos/cm	0483	WL	02/23/2005	N001	18.00 - 18.00	12388		F	#	-	-
	umhos/cm	0537	TS, SUMP	02/24/2005	N001	0.00 - 0.00	68325			#	-	-
	umhos/cm	0547	TS, INFL	02/23/2005	N001	0.00 - 0.00	21175			#	-	-
	umhos/cm	0557	WL	02/24/2005	N001	40.00 - 40.00	38815		F	#	-	-
	umhos/cm	0559	WL	02/23/2005	N001	19.00 - 19.00	6184		F	#	-	-
	umhos/cm	0560	WL	02/24/2005	N001	31.00 - 31.00	93450		F	#	-	-
	umhos/cm	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	2333		QF	#	-	-
	umhos/cm	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	5055		QF	#	-	-
	umhos/cm	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	1070		QF	#	-	-
	umhos/cm	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	1810		QF	#	-	-
	umhos/cm	0580	WL	02/24/2005	N001	18.00 - 18.00	2170		F	#	-	-
Sulfate	mg/L	0216	SL, RIV	02/22/2005	0001	0.17 - 0.17	390			#	10	-
	mg/L	0245	SL, RIV	02/22/2005	0001	0.25 - 0.25	250			#	5	-
	mg/L	0403	WL	02/23/2005	0001	18.00 - 18.00	550		F	#	10	-
	mg/L	0407	WL	02/23/2005	0001	17.00 - 17.00	3300		F	#	100	-
	mg/L	0470	WL, EXT	02/23/2005	0001	10.30 - 19.70	9700			#	250	-
	mg/L	0471	WL, EXT	02/23/2005	0001	10.30 - 19.70	9300			#	250	-
	mg/L	0472	WL, EXT	02/23/2005	0001	10.30 - 19.70	7900			#	100	-
	mg/L	0473	WL, EXT	02/23/2005	0001	10.30 - 19.70	7000			#	100	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0474	WL, EXT	02/23/2005	0001	10.30 - 19.70	6300			#	100	-
	mg/L	0475	WL, EXT	02/23/2005	0001	10.30 - 19.70	5400			#	100	-
	mg/L	0476	WL, EXT	02/23/2005	0001	10.30 - 19.70	4800			#	100	-
	mg/L	0477	WL, EXT	02/23/2005	0001	10.30 - 19.70	4700			#	100	-
	mg/L	0478	WL, EXT	02/23/2005	0001	9.60 - 23.90	5200			#	100	-
	mg/L	0479	WL, EXT	02/23/2005	0001	9.30 - 23.60	4700			#	100	-
	mg/L	0483	WL	02/23/2005	0001	18.00 - 18.00	2800		F	#	100	-
	mg/L	0537	TS, SUMP	02/24/2005	0001	0.00 - 0.00	51000			#	500	-
	mg/L	0547	TS, INFL	02/23/2005	0001	0.00 - 0.00	6600			#	100	-
	mg/L	0557	WL	02/24/2005	0001	40.00 - 40.00	9800		F	#	500	-
	mg/L	0559	WL	02/23/2005	0001	19.00 - 19.00	1400		F	#	50	-
	mg/L	0559	WL	02/23/2005	0002	19.00 - 19.00	1500		F	#	50	-
	mg/L	0560	WL	02/24/2005	0001	31.00 - 31.00	10000		F	#	500	-
	mg/L	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	1100		QF	#	50	-
	mg/L	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	1400		QF	#	50	-
	mg/L	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	300		QF	#	10	-
	mg/L	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	480		QF	#	10	-
	mg/L	0580	WL	02/24/2005	0001	18.00 - 18.00	730		F	#	10	-
	mg/L	0580	WL	02/24/2005	0002	10.23 - 20.16	720		F	#	10	-
Temperature	C	0216	SL, RIV	02/22/2005	N001	0.17 - 0.17	11.63			#	-	-
	C	0245	SL, RIV	02/22/2005	N001	0.25 - 0.25	10.00			#	-	-
	C	0403	WL	02/23/2005	N001	18.00 - 18.00	9.26		F	#	-	-
	C	0407	WL	02/23/2005	N001	17.00 - 17.00	11.98		F	#	-	-
	C	0470	WL, EXT	02/23/2005	N001	10.30 - 19.70	15.3			#	-	-
	C	0471	WL, EXT	02/23/2005	N001	10.30 - 19.70	15.55			#	-	-
	C	0472	WL, EXT	02/23/2005	N001	10.30 - 19.70	14.83			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0473	WL, EXT	02/23/2005	N001	10.30 - 19.70	15.47			#	-	-
	C	0474	WL, EXT	02/23/2005	N001	10.30 - 19.70	14.93			#	-	-
	C	0475	WL, EXT	02/23/2005	N001	10.30 - 19.70	14.97			#	-	-
	C	0476	WL, EXT	02/23/2005	N001	10.30 - 19.70	13.88			#	-	-
	C	0477	WL, EXT	02/23/2005	N001	10.30 - 19.70	15.03			#	-	-
	C	0478	WL, EXT	02/23/2005	N001	9.60 - 23.90	15.81			#	-	-
	C	0479	WL, EXT	02/23/2005	N001	9.30 - 23.60	15.33			#	-	-
	C	0483	WL	02/23/2005	N001	18.00 - 18.00	14.21		F	#	-	-
	C	0537	TS, SUMP	02/24/2005	N001	0.00 - 0.00	14.56			#	-	-
	C	0547	TS, INFL	02/23/2005	N001	0.00 - 0.00	14.49			#	-	-
	C	0557	WL	02/24/2005	N001	40.00 - 40.00	13.47		F	#	-	-
	C	0559	WL	02/23/2005	N001	19.00 - 19.00	14.59		F	#	-	-
	C	0560	WL	02/24/2005	N001	31.00 - 31.00	13.29		F	#	-	-
	C	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	12.02		QF	#	-	-
	C	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	9.02		QF	#	-	-
	C	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	10.01		QF	#	-	-
	C	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	8.37		QF	#	-	-
	C	0580	WL	02/24/2005	N001	18.00 - 18.00	9.56		F	#	-	-
Total Dissolved Solids	mg/L	0216	SL, RIV	02/22/2005	0001	0.17 - 0.17	920			#	20	-
	mg/L	0245	SL, RIV	02/22/2005	0001	0.25 - 0.25	650			#	20	-
	mg/L	0403	WL	02/23/2005	0001	18.00 - 18.00	1200		F	#	40	-
	mg/L	0407	WL	02/23/2005	0001	17.00 - 17.00	9500		F	#	400	-
	mg/L	0470	WL, EXT	02/23/2005	0001	10.30 - 19.70	21000			#	400	-
	mg/L	0471	WL, EXT	02/23/2005	0001	10.30 - 19.70	20000			#	400	-
	mg/L	0472	WL, EXT	02/23/2005	0001	10.30 - 19.70	17000			#	400	-
	mg/L	0473	WL, EXT	02/23/2005	0001	10.30 - 19.70	15000			#	400	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	0474	WL, EXT	02/23/2005	0001	10.30 - 19.70	13000			#	400	-
	mg/L	0475	WL, EXT	02/23/2005	0001	10.30 - 19.70	10000			#	400	-
	mg/L	0476	WL, EXT	02/23/2005	0001	10.30 - 19.70	9400			#	400	-
	mg/L	0477	WL, EXT	02/23/2005	0001	10.30 - 19.70	9400			#	400	-
	mg/L	0478	WL, EXT	02/23/2005	0001	9.60 - 23.90	12000			#	400	-
	mg/L	0479	WL, EXT	02/23/2005	0001	9.30 - 23.60	11000			#	400	-
	mg/L	0483	WL	02/23/2005	0001	18.00 - 18.00	7400		F	#	200	-
	mg/L	0537	TS, SUMP	02/24/2005	0001	0.00 - 0.00	68000			#	2000	-
	mg/L	0547	TS, INFL	02/23/2005	0001	0.00 - 0.00	15000			#	400	-
	mg/L	0557	WL	02/24/2005	0001	40.00 - 40.00	28000		F	#	1000	-
	mg/L	0559	WL	02/23/2005	0001	19.00 - 19.00	3400		F	#	200	-
	mg/L	0559	WL	02/23/2005	0002	19.00 - 19.00	3400		F	#	80	-
	mg/L	0560	WL	02/24/2005	0001	31.00 - 31.00	63000		F	#	2000	-
	mg/L	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	2200		QF	#	80	-
	mg/L	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	2900		QF	#	80	-
	mg/L	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	830		QF	#	40	-
	mg/L	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	1200		QF	#	40	-
	mg/L	0580	WL	02/24/2005	0001	18.00 - 18.00	1400		F	#	40	-
	mg/L	0580	WL	02/24/2005	0002	10.23 - 20.16	1500		F	#	40	-
Turbidity	NTU	0216	SL, RIV	02/22/2005	N001	0.17 - 0.17	354			#	-	-
	NTU	0245	SL, RIV	02/22/2005	N001	0.25 - 0.25	552			#	-	-
	NTU	0403	WL	02/23/2005	N001	18.00 - 18.00	2.80		F	#	-	-
	NTU	0407	WL	02/23/2005	N001	17.00 - 17.00	0.88		F	#	-	-
	NTU	0470	WL, EXT	02/23/2005	N001	10.30 - 19.70	7.93			#	-	-
	NTU	0471	WL, EXT	02/23/2005	N001	10.30 - 19.70	4.68			#	-	-
	NTU	0472	WL, EXT	02/23/2005	N001	10.30 - 19.70	5.57			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0473	WL, EXT	02/23/2005	N001	10.30 - 19.70	1.43			#	-	-
	NTU	0474	WL, EXT	02/23/2005	N001	10.30 - 19.70	1.08			#	-	-
	NTU	0475	WL, EXT	02/23/2005	N001	10.30 - 19.70	1.43			#	-	-
	NTU	0476	WL, EXT	02/23/2005	N001	10.30 - 19.70	4.92			#	-	-
	NTU	0477	WL, EXT	02/23/2005	N001	10.30 - 19.70	3.36			#	-	-
	NTU	0478	WL, EXT	02/23/2005	N001	9.60 - 23.90	2.55			#	-	-
	NTU	0479	WL, EXT	02/23/2005	N001	9.30 - 23.60	0.48			#	-	-
	NTU	0483	WL	02/23/2005	N001	18.00 - 18.00	2.31		F	#	-	-
	NTU	0537	TS, SUMP	02/24/2005	N001	0.00 - 0.00	104			#	-	-
	NTU	0547	TS, INFL	02/23/2005	N001	0.00 - 0.00	1.05			#	-	-
	NTU	0557	WL	02/24/2005	N001	40.00 - 40.00	2.19		F	#	-	-
	NTU	0559	WL	02/23/2005	N001	19.00 - 19.00	1.41		F	#	-	-
	NTU	0560	WL	02/24/2005	N001	31.00 - 31.00	2.21		F	#	-	-
	NTU	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	48.0		QF	#	-	-
	NTU	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	32.0		QF	#	-	-
	NTU	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	49.0		QF	#	-	-
	NTU	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	239		QF	#	-	-
	NTU	0580	WL	02/24/2005	N001	18.00 - 18.00	10.1		F	#	-	-
Uranium	mg/L	0216	SL, RIV	02/22/2005	0001	0.17 - 0.17	0.054			#	4.5E-05	-
	mg/L	0245	SL, RIV	02/22/2005	0001	0.25 - 0.25	0.012			#	4.6E-06	-
	mg/L	0403	WL	02/23/2005	0001	18.00 - 18.00	0.170		F	#	4.5E-05	-
	mg/L	0407	WL	02/23/2005	0001	17.00 - 17.00	0.960		F	#	4.5E-05	-
	mg/L	0470	WL, EXT	02/23/2005	0001	10.30 - 19.70	3.200			#	0.00046	-
	mg/L	0471	WL, EXT	02/23/2005	0001	10.30 - 19.70	2.800			#	0.00046	-
	mg/L	0472	WL, EXT	02/23/2005	0001	10.30 - 19.70	2.600			#	0.00046	-
	mg/L	0473	WL, EXT	02/23/2005	0001	10.30 - 19.70	2.300			#	0.00046	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0474	WL, EXT	02/23/2005	0001	10.30 - 19.70	1.900			#	0.00046	-
	mg/L	0475	WL, EXT	02/23/2005	0001	10.30 - 19.70	1.400			#	0.00046	-
	mg/L	0476	WL, EXT	02/23/2005	0001	10.30 - 19.70	1.300			#	0.00046	-
	mg/L	0477	WL, EXT	02/23/2005	0001	10.30 - 19.70	1.400			#	0.00046	-
	mg/L	0478	WL, EXT	02/23/2005	0001	9.60 - 23.90	1.300			#	0.00046	-
	mg/L	0479	WL, EXT	02/23/2005	0001	9.30 - 23.60	1.300			#	0.00046	-
	mg/L	0483	WL	02/23/2005	0001	18.00 - 18.00	0.840		F	#	4.5E-05	-
	mg/L	0537	TS, SUMP	02/24/2005	0001	0.00 - 0.00	6.200			#	0.00046	-
	mg/L	0547	TS, INFL	02/23/2005	0001	0.00 - 0.00	1.900			#	0.00046	-
	mg/L	0557	WL	02/24/2005	0001	40.00 - 40.00	2.700		F	#	0.00046	-
	mg/L	0559	WL	02/23/2005	0001	19.00 - 19.00	0.480		F	#	0.00046	-
	mg/L	0559	WL	02/23/2005	0002	19.00 - 19.00	0.560		F	#	0.00046	-
	mg/L	0560	WL	02/24/2005	0001	31.00 - 31.00	1.600		F	#	0.00046	-
	mg/L	0562	WL, PZ	02/23/2005	N001	1.53 - 1.53	0.0021		QF	#	4.6E-06	-
	mg/L	0563	WL, PZ	02/23/2005	N001	3.95 - 3.95	0.059		QF	#	4.5E-05	-
	mg/L	0564	WL, PZ	02/23/2005	N001	1.32 - 1.32	0.00003	B	UQF	#	4.6E-06	-
	mg/L	0565	WL, PZ	02/23/2005	N001	4.32 - 4.32	0.00077		QF	#	4.6E-06	-
	mg/L	0580	WL	02/24/2005	0001	18.00 - 18.00	0.130		F	#	4.5E-05	-
	mg/L	0580	WL	02/24/2005	0002	10.23 - 20.16	0.130		F	#	4.5E-05	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 11:20 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='MOA01' AND location_code in('0470','0471','0472','0473','0474','0475','0476','0477','0478','0479','0403','0407','0483','0557','0559','0560','0562','0563','0564','0565','0580','0216','0245','0537','0547') AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #2/22/2005# and #2/24/2005#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LOCATION TYPES: SL SURFACE LOCATION TS TREATMENT SYSTEM WL WELL

LOCATION SUBTYPES: EXT Extraction Well INFL Treatment System Influent PZ Piezometer RIV River
SUMP Sump

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- F Low flow sampling method used.
- G Possible grout contamination, pH > 9.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- Q Qualitative result due to sampling technique
- R Unusable result.
- U Parameter analyzed for but was not detected.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

BLANKS REPORT
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05020166
REPORT DATE: 06/02/05 10:31:07: AM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	ID	UNITS	RESULT	QUALIFIERS LAB	DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE
Ammonia Total as N	MOA01	0999	02/24/2005	0001	mg/L	0.1	U		0.1		E
Chloride	MOA01	0999	02/24/2005	0001	mg/L	0.2	U		0.2		E
Sulfate	MOA01	0999	02/24/2005	0001	mg/L	0.5	U		0.5		E
Total Dissolved Solids	MOA01	0999	02/24/2005	0001	mg/L	20	U		20		E
Uranium	MOA01	0999	02/24/2005	0001	mg/L	0.000085	B	U	0.0000046		E

BLANKS REPORT
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05020166
REPORT DATE: 06/02/05 10:31:07: AM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	ID	UNITS	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
C	Pesticide result confirmed by GC-MS.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
D	Analyte determined in diluted sample.
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
>	Result above upper detection limit.
J	Estimated

DATA QUALIFIERS:

J	Estimated value.	F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
L	Less than 3 bore volumes purged prior to sampling.	R	Unusable result.	X	Location is undefined.
U	Parameter analyzed for but was not detected.	Q	Qualitative result due to sampling technique		

SAMPLE TYPES:

E	EQUIPMENT BLANK

Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 6/2/2005 10:39 am

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0403	O	3968.95	02/23/2005	17:29	16.10	3952.85	
0407	O	3969.09	02/23/2005	17:51	17.01	3952.08	
0470		3968.49	02/23/2005	08:45	17.20	3951.29	
0471		3968.83	02/23/2005	09:02	16.89	3951.94	
0472		3968.81	02/23/2005	09:16	17.23	3951.58	
0473		3969.05	02/23/2005	09:32	17.59	3951.46	
0474		3969.22	02/23/2005	09:49	17.22	3952.00	
0475		3969.46	02/23/2005	10:02	17.55	3951.91	
0476		3969.48	02/23/2005	10:19	17.99	3951.49	
0477		3969.40	02/23/2005	10:31	17.42	3951.98	
0478		3969.49	02/23/2005	10:49	17.64	3951.85	
0479		3969.27	02/23/2005	11:00	17.03	3952.24	
0483		3968.90	02/23/2005	16:39	16.65	3952.25	
0557		3968.85	02/24/2005	08:16	15.37	3953.48	
0559		3969.92	02/23/2005	17:01	17.40	3952.52	
0560		3968.77	02/24/2005	08:43	16.15	3952.62	
0562		3956.29	02/22/2005	14:50	3.74	3952.55	
0563		3955.05	02/22/2005	14:55	2.77	3952.28	
0564		3956.39	02/22/2005	15:35	3.73	3952.66	
0565		3954.05	02/22/2005	15:40	1.75	3952.30	

RECORDS: SELECTED FROM USEE700 WHERE site_code='MOA01' AND location_code in('0470','0471','0472','0473','0474','0475','0476','0477','0478','0479','0403','0407','0483','0557','0559','0560','0562','0563','0564','0565','0216','0245','0537','0547') AND LOG_DATE between #2/22/2005# and #2/24/2005#

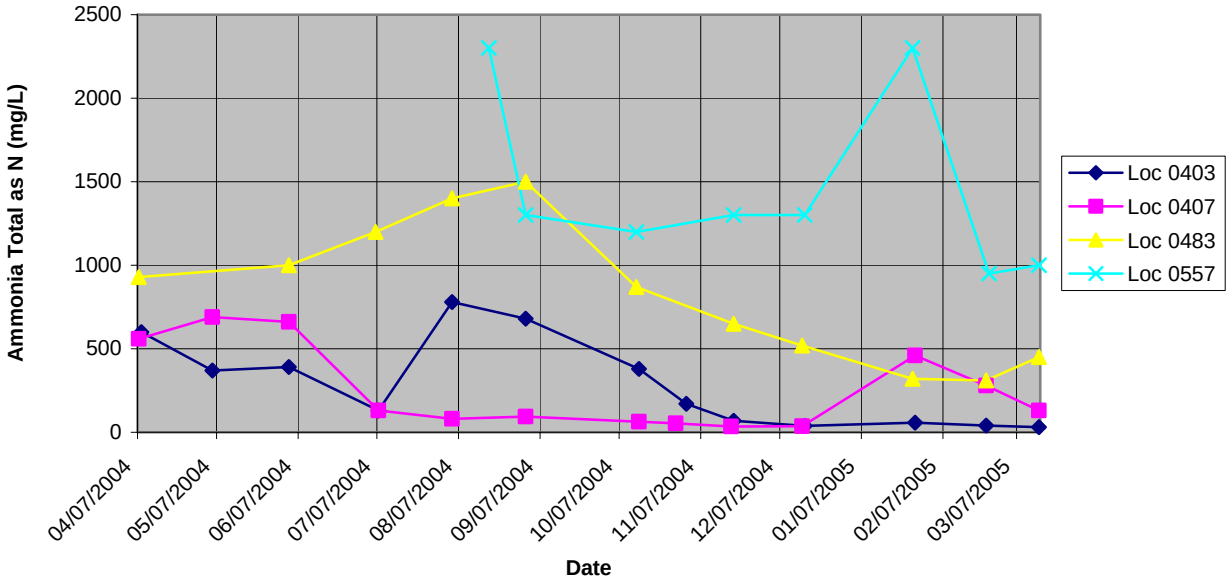
FLOW CODES: O ON-SITE

WATER LEVEL FLAGS:

Time Versus Concentration Graphs

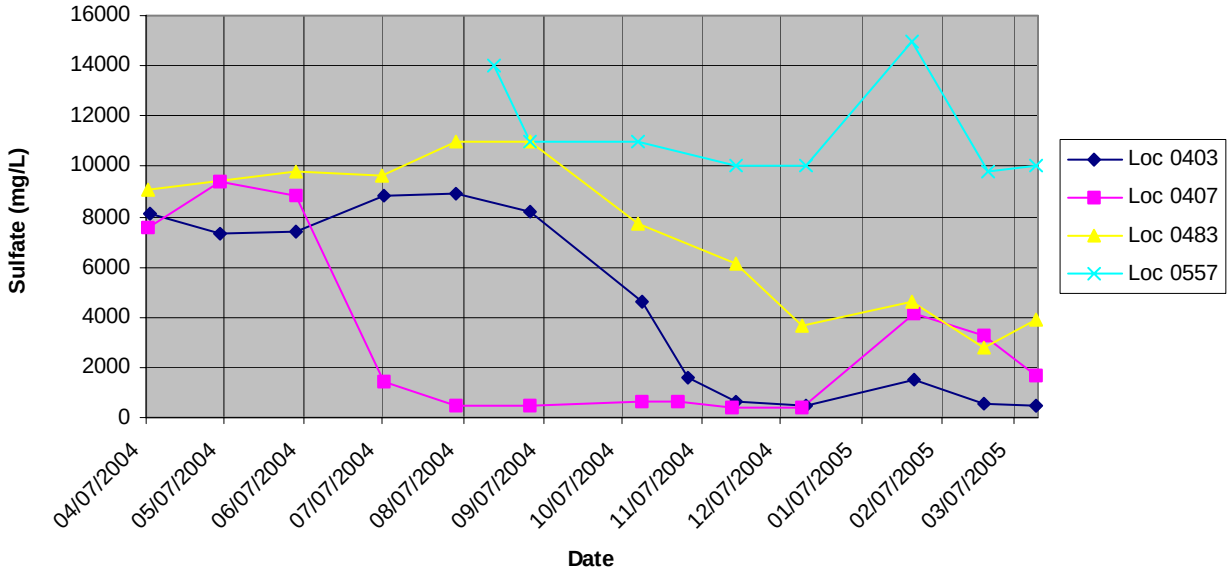
Moab Site (MOA01)

Ammonia Total as N Concentration



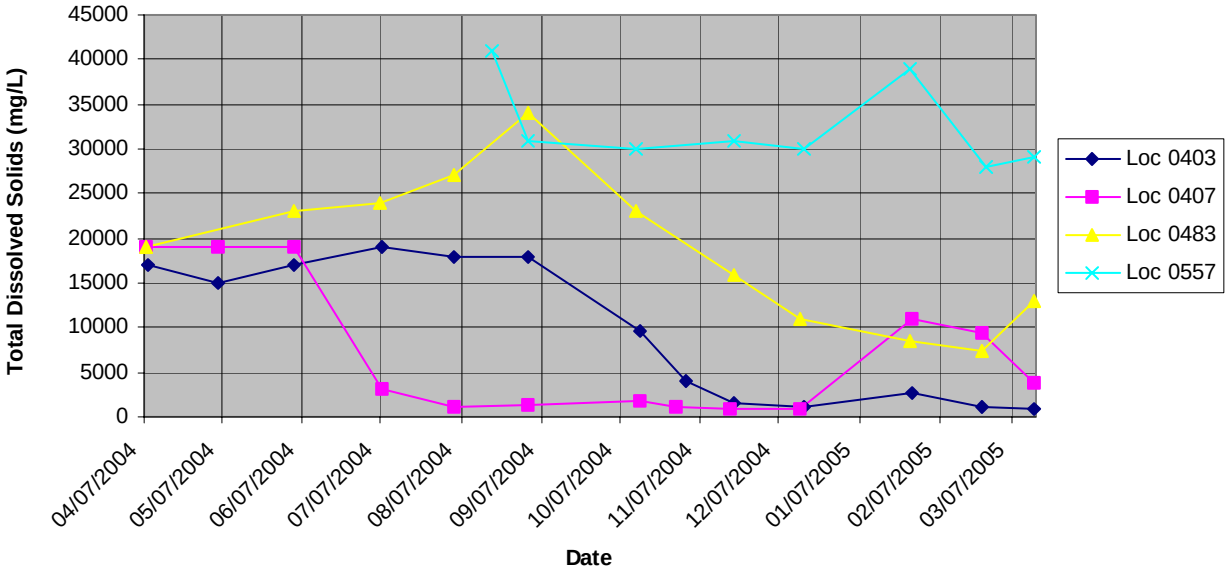
Moab Site (MOA01)

Sulfate Concentration



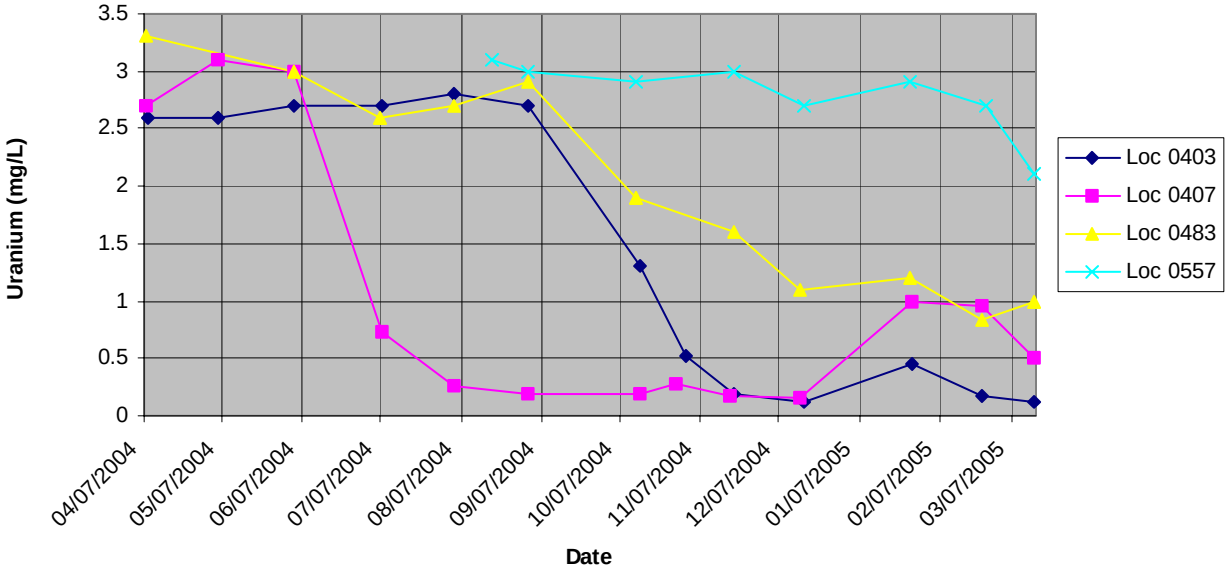
Moab Site (MOA01)

Total Dissolved Solids Concentration



Moab Site (MOA01)

Uranium Concentration



Attachment 2

Trip Report

Stoller

established 1959

DATE: March 7, 2005

TO: Ken Karp

FROM: K. G. Pill

SUBJECT: Trip Report

Site: Moab – I.A. Configuration I Extraction Well Field Monthly Sampling – February 2005

Date of Sampling Event: February 22, 23, and 24, 2005.

Team Members: Ken Pill and Steve Hall.

Number of Locations Sampled: 10 extraction wells (0470 through 0479), 6 observation wells (0403, 0407, 0483, 0557, 0559, and 0560), 4 piezometers (0562 through 0565) and 4 surface water locations (0216, 0245, 0537, and 0547). Including two duplicates and one equipment blank, a total of **27** samples were collected.

Locations Not Sampled/Reason: Locations 0244 and 0548 were not sampled. Surface water location 0244 is located within 10 ft of surface water location 0216, and the results obtained from 0216 can be applied to 0244. The evaporation pond recirculation pump has not been running yet this year, and as a result sample 0548 was not collected.

Field Variance: Only a 125 ml sample was collected for uranium analysis as opposed to the standard 500 ml sample volume. Limited sample volumes were collected from piezometers 0562 and 0564 (~175 and ~200 mls, respectively). The samples collected from piezometers 0562 through 0565 were not filtered in the field and not preserved beyond 4 ^{o}C. This variance was discussed with Steve Donivan prior to sample submittal.

A duplicate sample was collected during the sampling of observation well 0580, which is actually part of Configuration 2. Configuration 2 was sampled during the same time frame as Configuration 1.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2782	0559	Duplicate	Ground water	NDY-351
2783	0580	Duplicate	Ground water	NDY-358
2784	NA	Equipment Blank	Water	NDY-357

RIN Number Assigned: All samples were assigned to RIN **05020166**.

Sample Shipment: All samples were shipped in 2 coolers overnight FEDEX to Paragon Analytics, Inc. from Moab, Utah, on February 24, 2005 (Airbill Nos. 8473 2967 6281 and 8473 2967 6292).

Location Specific Information – Extraction Wells: Extraction wells were sampled using dedicated submersible pumps. Water levels and pumping rates (gpm) for each extraction well prior to sampling are provided in the table below:

Well No.	Date	Time	Water Level (ft btoc)	Pumping Rate (gpm)
0470	2/23/05	08:47	17.20	1.27
0471	2/23/05	09:05	16.89	0.96
0472	2/23/05	09:22	17.23	0.72
0473	2/23/05	09:37	17.59	0.81
0474	2/23/05	09:52	17.22	~0.7[a]
0475	2/23/05	10:07	17.55	1.10
0476	2/23/05	10:24	17.99	0.51
0477	2/23/05	10:32	17.42	1.02
0478	2/23/05	10:53	17.64	0.38
0479	2/23/05	11:04	17.03	1.21

a = Pumping rate was estimated. Well was running, but flow meter not operating properly at the time of sampling.

Location Specific Information – Observation Wells: All observation wells were sampled using micro-purge techniques with a peristaltic pump and dedicated downhole tubing. Sample depths and water levels for each observation well are listed below. **Note the sample depths are below ground surface.**

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0403	2/23/05	17:38	16.10	18
0407	2/23/05	18:00	17.01	17
0483	2/23/05	16:48	16.65	18
0557	2/24/05	08:26	15.37	40
0559	2/23/05	17:12	17.40	19
0560	2/24/05	08:55	16.15	31

Location Specific Information – Piezometers: Water levels were measured in piezometers 0562, 0563, 0564, and 0565. It was dry at the base of each location (photographs of each location are attached to this report). The data are provided below:

PZ No.	Date	Time	Depth to Water (ft btoc)
0562	2/22/05	14:55	3.74
0563	2/22/05	14:59	2.77
0564	2/22/05	15:40	3.73
0565	2/22/05	15:43	1.75

Limited sample volumes were collected from piezometers 0562 and 0564 (~175 and ~200 mls, respectively). In order to collect the maximum sample volume for laboratory analysis, it was necessary to revisit some of these locations a number of times. All four piezometers were purged

on February 22; the first half of the sample was collected on February 23; and the remaining sample volume was collected on February 24, 2005. In order to maximize the volume of water available for analysis, these samples were not filtered in the field and were not acid preserved. Photos of the piezometer sampling locations are attached to this report.

Location Specific Information – Surface Water Sampling: Location 0216 was sampled approximately 10 ft to the north of the marked location in order to find a location deep enough to complete the sampling and to collect sample water in contact with the base of the bank. The location was connected to the main channel in both the upstream and downstream directions.

The sample from 0245 was collected approximately 5 ft east of the base of piezometers 0564/0565. The water body at this location was connected to the main channel in both the upstream and downstream directions. Photos of these locations are attached to this report. Sample depths associated with each surface water sample are provided below:

Location No.	Date	Time	Sample Depth (ft bws)
0216	2/22/05	15:10	0.17
0245	2/22/05	15:50	0.25

Notes: ft bws = feet below water surface

Well Inspection Summary: A well inspection was not conducted.

Equipment: All equipment functioned properly.

Site Issues: This sampling event marks the first time dissolved oxygen data associated with the Configuration 1 well field were collected. The extraction wells had been running at a flow rate of approximately 1 gpm (a total of approximately 10 gpm for the well field) since February 15, 2005. According to the USGS Cisco Gaging Station (Station No. 09180500), the mean daily Colorado River Flows during the time period of this sampling event are:

Date	Mean Daily Flow (cfs)
02/21/2005	3,710
02/22/2005	3,690
02/23/2005	3,690
02/24/2005	3,700
02/25/2005	3,580
02/26/2005	3,430

Corrective Action Required/Taken: None.

(KGP/lcg)

cc: J. D. Berwick, DOE-EM (e)
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L. E. Cummins, Stoller (e)
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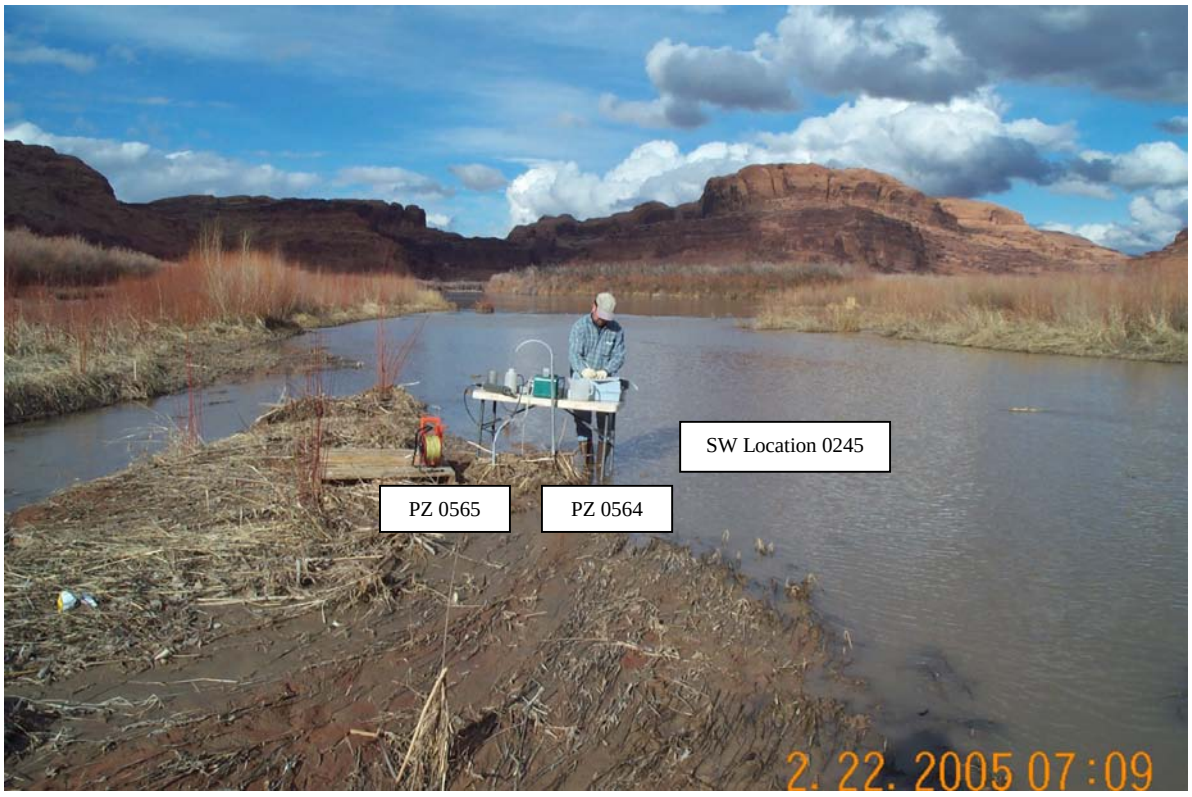
K. E. Miller, Stoller
K. G. Pill, Stoller (e)
J. E. Price, Stoller (e)
L. M. Wright, Stoller (e)
Working File, MOA

Piezometers 0562 and 0563



Piezometers 0564 and 0565, Surface Location 0245

Surface Location 0216